DOCUMENT RESUME

ED 452 783 HE 034 003

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TITLE	Improving Retention through a Comprehensive Student Development Model.
PUB DATE	2001-04-12
NOTE	9p.; Paper presented at the Annual Meeting of the American Educational Research Association (Seattle, WA, April 10-14, 2001).
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Persistence; *College Freshmen; Higher Education; *Individual Development; Likert Scales; Models; *School Holding Power
IDENTIFIERS	*City University of New York Lehman College

ABSTRACT

Lehman College of the City University of New York has begin a 5-year project to improve the retention of first-time, full-time regularly admitted freshmen through the implementation of a student development model. The development of this model is described and the results of some preliminary studies are presented. As part of the project, researchers are testing the seven-stage Kreuzer-Johnson (P. Kreuzer and A. Johnson) Student Development Model and investigating whether a set of defined measures can be used to determine passage through the seven stages of development and to predict attrition or retention. This study focuses on the reliability of the first part of the Student Experience Survey, which will measure attitudes toward the college experience. This instrument is a 50-item questionnaire with Likert scale items that can be divided into 4 10-item subscales to assess attitudes toward specific aspects of the student experience. The pilot of the questionnaire was administered to 340 freshmen in a Freshman Year Initiative program, and the reliability of the total test was found to be 0.81. Item analysis identified 4 flawed items, and the revised survey was administered to 284 students, yielding a total test reliability of 0.89. The next step will be to determine if the survey had predictive validity. (SLD)

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American Educational Research Association Annual Meeting
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Introduction

Like many institutions of higher learning across the country, and especially those that serve a non-traditional student population, Lehman College of the City University of New York is faced with a high attrition rate and lower than desirable graduation rate after six years. With support from the United States Department of Education in a Title V grant for Strengthening Institutions--Hispanic Serving Institutions, the College has begun a five-year project designed to improve our retention of first-time, full-time, regularly admitted freshmen through the implementation of a student development model.

As part of this project, we are testing the seven-stage Kreuzer-Johnson Student Development Model based on the life span, professional/vocational development theory proposed by Donald H. Blocher and Rita S. Rapoza. (Arthur W. Chickering and Associates, eds., *The Modern American College,* 1981) The overall objective of our research is to determine if a set of defined measures including academic preparation measures from high school, academic achievement measures from college, and attitudinal measures from college can be used to determine passage through the seven stages of development and to predict attrition or retention. Establishing valid predictors will enable us to provide strategic interventions to help students stay in school.

Although academic preparation and achievement variables are well-established predictors of success, we believe that student attitudes toward the college experience may also play a significant role in determining whether an individual will persist and graduate. Currently, we are in the process of testing the first of two survey instruments, Parts I and II of the Student Experience Survey. Using Part I of the survey, we are measuring a set of attitudes toward the college experience among a pilot cohort of students that entered Lehman in fall 1999. Our current research objective is to establish the reliability of Part I of the Student Experience Survey.

Background

Establishing improved retention of first-time, full-time freshmen as a college goal provided the impetus for a study to understand why students persist. An analysis of persistence data, a student questionnaire, and anecdotal evidence of student conversations with faculty, professional advisors, career counselors, and a part-time personal counselor in the College's Freshmen Year Initiative program revealed that although many students leave for reasons the College cannot address—financial and family problems, for

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example--one of the greatest problems facing our students is a lack of acculturation to the academy. Based on many decades of experience in teaching, advising, and counseling students, we also believe that the acculturation process, culminating in academic success and vocational fulfillment, is a developmental process.

Thus, we considered a number of theories, such as those proposed by Loevinger and Weathersby; Perry; Kohlberg and Gilligan; and Tolbert (see summary in Chickering, 1981, pp. 774-775), and chose the professional/vocational theory of life span development suggested by Blocher and Rapoza as the basis for a student development model that would reflect the particular growth pattern we believe our successful students experience.

The Kreuzer-Johnson Student Development Model has seven stages:

I. Applying,
II. Enrolling,
III. Succeeding with Courses,
IV. Attaining Overall Academic Success,
V. Progressing toward Career Goals,
VI. Moving toward Independence, and
VII. Defining Self in Terms of Education and Profession.

Each stage represents a moment in an overall continuum of a student's relationship with the College, as well as his or her intellectual development, progress toward a fulfilling career, and understanding and appreciation of the complex interrelationship between academic development and professional/vocational success.

Most of our students apply to college because their families, teachers, and society in general expect them to do so. They also may apply because they have grown up hearing the cliché, "to get a good job, get a good education," and because going to college solves the problem of what to do immediately following high school. Most entering students, however, are naïve about what the College has to offer and the demands of college-level work. Although many can articulate their career aspirations, they may not fully understand the variety of skills needed for their chosen profession or know of the multitude of possibilities open to them. Because many families place unreasonable responsibilities on the students, learning coping strategies and time management skills becomes an important part of the early college experience. In addition, many students must learn to balance their motivation for attending college—long-term financial and professional success—with their realization that attending college may delay short-term desires for independence from family and financial gain. For students to succeed, we have to counter many of the beliefs with which they arrive and help them progress through the stages of the Student Development Model toward a more sophisticated and realistic set of expectations from the college experience.

To establish a means for determining where on the continuum an individual might be and thus help students progress, we began to define a set of measures to use as criteria for determining student passage through each stage. Recognizing that academic preparation

in high school is always significant in long-term student success, we knew we would have to consider such variables as number of academic units from high school, high school grade average, placement test scores, and SAT scores. We also knew we would have to consider standard achievement measures at the College such as GPA, declaration of major, and number of credits earned over time.

In order to find out how students feel about their progress or whether they are developing more realistic ideas about their experience, we developed a two-part survey instrument:

- Student Experience Survey Part I, which is to be administered in the first, second and fourth semesters, includes a set of scales for measuring the students' attitudes toward their

  1. Use of Basic Study Skills,
  2. Satisfaction with Academic Progress,
  3. Satisfaction with the Career Orientation of Courses, and
  4. Social Integration.

- Student Experience Survey Part II, to be administered in the sixth and eighth semesters, includes a set of scales for measuring the students' attitudes toward their

  1. Satisfaction with Academic Success,
  2. Satisfaction with Progress toward Establishing a Career,
  3. Use of Advanced Cognitive Skills, and
  4. Satisfaction with Emerging Independence.

- In addition to these attitudinal subscales, we also developed a set of questions included on both parts relating to thoughts about

  1. Leaving School,
  2. Relationships with Faculty or Professional Staff,
  3. Satisfaction with Student Services, and
  4. Overall Feelings about Belonging at the College.

We are currently testing the reliability of Part I of the Student Experience Survey.

Limitations and Assumptions

There are two major limitations to this research. Although a long-term goal of the project is to establish the validity of the instrument, currently we can only claim a crude form of face validity. Having established a set of attitudes to associate with each stage of development, we have developed survey questions that we believe, and which appear on the surface, to relate to those attitudes.

A second limitation is that we are working with a specific student population. Lehman College, a public comprehensive institution offering both baccalaureate and masters

programs, is located in the Bronx, the poorest borough of New York City. The College serves an urban, generally poor, largely minority, and first-generation college student population. Many students speak a language other than English at home, and all students commute to the College. Students who begin as full-time freshmen are generally of traditional college student age, whereas the students who transfer to the College or who begin part-time are generally working adults with children. The assumptions that underlie this project are based on our experience with first-time freshmen students. Although we believe that the model will be widely applicable, establishing its predictive power at Lehman does not necessarily ensure that it will work with different types of students at different types of institutions.

In designing the project, we have made a number of basic assumptions. The most overarching is that a model of student development can be used to predict retention or attrition, and that such a model can help the College develop appropriate intervention strategies to increase the percentage of students retained through graduation. A related assumption is that the profile of our student population suggests a set of high-risk variables, such as socio-economic status and familial lack of experience with the institutions and expectations of higher education, that lead to attrition. We also believe that attitudes toward academic and career progress affect a student's commitment to staying in school. In addition, we believe that one of the major factors that result in student attrition is that many first-generation students enroll with the expectation that the college experience will be entirely vocational or career preparatory in nature. These students may be frustrated by an inability to connect their academic work to the career preparation they expect. Similarly, they may not understand or recognize the academic values of philosophical inquiry, critical thinking, and development of higher order cognitive skills that underlie many faculty members' approach to teaching. Thus, we assume that variables other than those associated with academic preparation, which are known to be strong predictors of success, may be related to retention. In particular we believe that student attitudes toward a variety of aspects of the college experience are important factors in predicting retention or attrition.

In designing our survey instrument, we have assumed that we can use Likert-scales to measure student attitudes toward definable aspects of the college experience and that we can link these scales to the particular stages of the hypothesized student development model. From our own experiences with students and from the standard literature on retention, we believe that the variables we have included in the Kreuzer-Johnson Student Development Model (e.g., contact with faculty and professional staff, finding friends on campus, establishing mentoring relationships with people in a chosen career path, and registering for internships or project courses) as well as more standard measures (e.g., grade point average, success in completing credits, high school units completed, high school average, and standardized test scores) are useful predictors of attrition or retention.

The Student Experience Surveys have been constructed to help assess student progress through this model. Both consist of two 50-item questionnaires each with:

- 40 Likert-scale items that are dividable into 4 ten-item subscales to assess attitudes toward specific aspects of the student's college experience;

- 3 items related to student satisfaction with academic advising, career counseling, and personal counseling; and
- 7 items related to campus affiliations.

For each of the attitude subscales, we have written five sets of paired items. Each pair consists of one positive and one negative statement. For example, a pair of statements in the Survey designed as part of the subscale on attitude toward academic progress is:

- I have enjoyed my course work this semester.
- My course work this semester has been unpleasant.

Students indicate their level of agreement with the statement on a scale of 1 to 5, from strongly agree to strongly disagree. The items are scored from one to five with reverse scoring on the negative items. With a score of 3 being neutral and an understanding that the real limits of the number extend from 2.5 to 3.5, we have assumed that a score of 3.5 on a particular item or of 35 on a subscale that includes 10 items indicates a positive student attitude toward the variable in question and can be used to help measure student passage through the associated stage of development.

Methodology

We are using freshmen who began in fall 1999 as the cohort to follow longitudinally through all phases of developing the model. Part I of the Survey has now been administered three times to students in either in freshman year orientation sections or freshman English classes. The survey was first piloted in the Fall semester of 1999. A revised version was given in the Spring of 2000, and both new freshmen and second semester students were invited to take it again in Fall 2000. Using Cronbach-alpha correlation, we have determined the overall reliability of Part I of the Student Experience Survey, and using item analysis, we have determined the reliability of the subscales.

Research Findings to Date

We administered the pilot of Part I of the Student Experience Survey to 340 students in Freshman Year Initiative classes in Fall 1999. Using the Cronbach-alpha correlation coefficient, we found:

- the reliability of the total test to be .81

Using item analysis we found the reliability coefficients for the subscales as follows:

- Attitude toward Basic Skills = .75
- Attitude toward Academic Progress = .76
- Satisfaction with Career Orientation of Courses = .75
- Social Integration = .74

The item analysis from the first pilot administration for each subscale indicated a need to change one positive/negative pair related to working while in college. The item analysis for the full 40-item test indicated that the logic of four items on study skills was flawed. The items have been revised and the revised survey was administered to 284 students in the Spring of 2000. Using the Cronbach-alpha correlation coefficient we found:

- the reliability of the total test to be .89

Using item analysis we found the reliability coefficients for the subscales as follows:

- Attitude toward Basic Skills = .74
- Attitude toward Academic Progress = .84
- Satisfaction with Career Orientation of Courses = .86
- Social Integration = .79

This second analysis indicated a need to revise two items that were changed before the Fall 2000 administration of the survey. These items were revised and the final version of the survey was administered to 259 students in the Fall of 2000. Using the Cronbach-alpha correlation coefficient we found:

- the reliability of the total test to be .89

Using item analysis we found the reliability coefficients for the subscales as follows:

- Attitude toward Basic Skills = .78
- Attitude toward Academic Progress = .81
- Satisfaction with Career Orientation of Courses = .89
- Social Integration = .74

Next Steps

Our next task is to begin to determine if the survey has predictive validity. In order to do this, we will correlate the fall 1999 cohort Student Experience Survey data (total score, four subscales, and 10 items) with both spring 2000 and fall 2000 enrollment. These procedures will indicate the degree to which the instrument alone can predict retention or attrition. We are using this preliminary pilot cohort for analysis because we are intervening with Fall 2000 cohort students based on attitude measures and other scores.

We also are currently designing a multiple regression analysis protocol for correlating academic preparation measures, academic achievement measures, and Student Experience Survey scores with retention and attrition. Even though we continued to revise Part I of the Student Experience Survey, we believe it is important to generate its preliminary predictive validity measures and to begin to assess the predictive power of the Kreuzer-Johnson Student Development Model.

While the predictive validity of the instrument is yet to be confirmed on our fall 1999 entering cohort, we are initiating a number of intervention strategies during the spring 2001 semester with our Fall 2000 cohort. With a cadre of peer educators, we are calling students who score less than 35 on any of the four subscales in Part I of the Survey. Those students whose subscale scores indicate concerns about study skills or academic progress will be contacted by peers working in the Academic Information and Advisement Center. Those whose subscale scores indicate concerns about the career orientation of courses will be contacted by peers in the Career Services Center, and those who appear to be concerned about social integration will be contacted by peers in the Counseling Center. In all cases, these contacts are designed to encourage students to discuss their issues of concern with the College's professional advisors and counselors.

In the meantime we are also developing a Student Development Database for storing student data that is not captured on the College's Student Information Management System such as referrals of students from faculty and professional staff, survey data, and student contact with advisors, career counselors, tutors, and faculty. Constructed to access the standard information from the College system as well as its own data, the new system will allow sophisticated analysis of the academic preparation, academic achievement, and the attitudinal measures that can be used for identifying students in need of interventions related to the stages of the Kreuzer-Johnson Student Development Model and for other personalized communications such as letters congratulating students on a successful semester or inviting those who seem to be ready for internships courses for a targeted workshop.

Conclusion

We have now determined that Part I of the Student Experience Survey is statistically reliable. Therefore, we are ready to use it widely as a survey instrument and to employ it as part of our overall model. With the reliability established, we can begin to determine its predictive power both as an instrument by itself and in conjunction with the other variables of the Kreuzer-Johnson Student Development Model.